

204 2-4 Vertical Angles (Notes)

Vertical angles—Two angles are vertical if they are nonadjacent and their sides are formed by two intersecting lines.

$\angle ACB$ and $\angle DCE$ are vertical angles.

Name two other vertical angles in the picture.

$\angle DCA$
 $\angle BCE$

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- $\angle TOU$ and $\angle XOW$ are vertical angles.
- $\angle YOX$ and $\angle UOV$ are vertical angles.
- $\angle VOX$ and $\angle YOW$ are vertical angles.

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- $\angle VOW$ and $\angle TOY$ are vertical angles.
- $\angle TOV$ and $\angle YOW$ are vertical angles.
- $\angle TOX$ and $\angle WOV$ are vertical angles.

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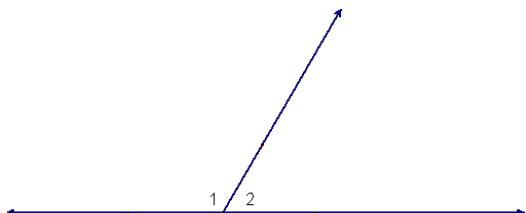
Linear pair—two adjacent angles whose non common sides are a line.

$\angle 1$ and $\angle 2$ are a linear pair.

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Linear Pair Postulate—if 2 angles form a linear pair, then they are supplementary.

$$m\angle 1 + m\angle 2 = 180$$



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Name 2 angles that form a linear pair in the picture below.

$\angle 1 + \angle 2$

Name another linear pair.

$\angle 2 + \angle 3$

If the $m\angle 1 = 138^\circ$,

Find:

$m\angle 2 =$

42

$m\angle 3 =$

138°

$m\angle 4 =$

42°

Which angles are vertical in the picture above? $\angle 1 + \angle 3$; $\angle 2 + \angle 4$

What do you notice about their measurements? $=$

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Theorem 2.3--

Vertical \angle s are \cong

Use the above information to solve for the variables.

1. $x =$ 25 $y =$ 7

$$4x = 100$$

$$x = 25$$

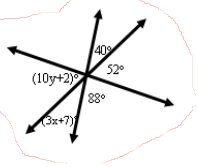
$$8y + 24 = 80$$

$$\begin{array}{r} 8y + 24 = 80 \\ -24 \quad -24 \\ \hline 8y = 56 \\ y = 7 \end{array}$$

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2. $x = 11$ $y = 5$

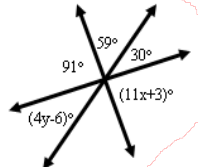


$3x + 7 = 40$
 $3x = 33$
 $x = 11$

$10y + 2 = 52$
 $10y = 50$
 $y = 5$

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3. $x = 8$ $y = 9$

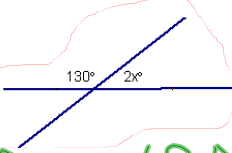


$11x + 3 = 91$
 $x = 8$

$4y - 6 = 30$
 $y = 9$

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4. $x = 25$



$2x + 130 = 180$
 $2x = 50$
 $x = 25$

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HW
p78-80
#s 9-25, 28, 29, 38, 39, 51-54

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